



LEWS



NEWS



Kristin Stanford points out a LEWS hibernaculum. Photo: M.Seymour

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Recovering Lake Erie's Natural Heritage

Seasons of Change

As another summer on the lake draws to a close, I am reminded of the cycles of the seasons, the approach of fall, and then winter, and the circle of life that all creatures great and small are subject to. As a child, I remember the melancholy feelings surrounding summer's end and school's beginning. I loved the smell of leaves on a blustery fall day, meeting my new teacher, and reuniting with my classmates, but I missed basking on the lake's shore in August, exploring the nature that comes alive during the growing season, and just that incredible *feeling* summer possesses.

While human beings have our seasonal rituals, nowhere are seasonal patterns more apparent than in the animal and plant kingdoms. For many critters in this part of the world, spring is the season of birth and awakening; summer is about growth and reproduction; and fall is preparation for the most intense time of year--winter, which is simply about survival.

Organisms have evolved various strategies for surviving the harsh winters of the Great Lakes region. Many organisms, including snakes, burrow into the ground, moving beyond the point where the soil freezes, into the safety and steady climate of the subterranean earth. During hibernation, many bodily processes slow considerably, allowing animals to conserve enough energy so they can survive without eating or drinking at all during this lengthy period. The biological adaptation of hibernation is a life-sustaining capability.

Hibernation is made possible by the presence of a hibernaculum (plural=hibernacula), a critical habitat feature that shelters animals from harsh weather.

Little was known about the hibernation habitats of Lake Erie Watersnakes (LEWS) until very recently. Research by Dr. Richard King and Kristin Stanford first identified where some LEWS were hibernating in 2001. By observing the surface characteristics of the habitat above the hibernacula, we were able to conclude that LEWS were using cracks, crevices, or holes in the ground near rocky areas, tree roots, foundations, and similar structures, and using the same area each year.

Recently, LEWS were detected hibernating in areas proposed for excavation at the Middle Bass Island (MBI) marina project. Through the consultation process between The Ohio Department of Natural Resources (ODNR) and the Fish and Wildlife Service, excavation of hibernacula was authorized, so long as offsetting measures were performed. These measures included constructing two artificial hibernacula to compensate for the loss of natural hibernacula, and studying the composition of these special areas during excavation.

During the fall of 2007, Kristin placed marked LEWS in one of ODNR's artificial hibernaculum, created by excavating a large hole, filling it with various sized rocks, boulders, and pipes, and covering it with a thin layer of soil. Of the 20 adult LEWS that were placed in the artificial structure during the fall, at least 75% emerged successfully the following spring.

(cont. on page 2)

Middle Bass Island State Park Marina Construction Update

Construction activities at Middle Bass Island State Park Marina are well underway. Below is a summary of actions that have occurred to date, and the construction plans for the rest of the year.

- In the fall of 2007 a cofferdam was constructed to separate the marina from Lake Erie.
- In late spring of 2008 the contractor began mobilization of equipment to the island, installed the snake fence (see article page 3) and began clearing the vegetation and trees from various State Park parcels.
- Upon approval from the regulatory agencies and to protect fish spawning activities during the early summer, dewatering of the marina began on July 11, 2008. The contractor had two 6-inch and one 14-inch pump running for about four days to dewater the basin.
- Once dewatering occurred, the mass excavation of the peninsula began in earnest around July 20. The work started with the removal of the invasive plant *Phragmites australis*. The *Phragmites* was removed from both the peninsula and the wetland on the north side of the marina as part of the Corps of Engineers-approved mitigation plan. The *Phragmites* is buried and covered with at least 3 feet of soil to prevent regeneration.
- In July a vernal pool wetland was built at Parcel B to provide habitat for salamanders, turtles, and birds. Large logs were scattered throughout the vernal pool to provide perching areas above the waterline.
- The contractor is working 12-14 hours a day, 5-6 days a week with some Sunday work. In general, the contractor is operating 5-6 trackhoes, 6-12 off-road trucks, 4 dozers, 2 compactors and other miscellaneous equipment. The soil from the peninsula is being placed on various State Park parcels to shape the sites for the proposed campgrounds and Park facilities. A large portion of the soil from the peninsula will be used to reshape the embankment along the eastern edge of the marina.
- It is the project team's goal to have the earthwork, new inlet channel excavation, armor stone revetments and embankments, pipe pile installation, and reflooding of the marina completed before October 15, 2008, as we coordinate the work around LEWS habitat and seasonal activity patterns.
- Under a separate contract, the docks for the marina will be manufactured over the winter and they will be installed in the spring of 2009. Other facilities, such as the harbor master building, restrooms, and showers will be constructed at a later date.

Rob Stanley
BBC&M Engineering, Inc.
Consultant on Middle Bass Island State Park Marina Project



(cont. from page 1)

This July, researchers were on hand to observe and document what composed the hibernation sites at the MBI marina. Contractors used excavators to carefully dig in the area where the LEWS had been detected. The substrate on this part of the marina peninsula was composed of tightly packed small (approximately 6-inch) diameter rock. The interstitial spaces between the rocks were just large enough for a watersnake to squeeze in and wind its way down to an appropriate depth. Approximately 3 feet below the ground surface we found the remains of several adult watersnakes that had not survived a previous winter, as well as a radio transmitter from one of the snakes. We now better understand the secretive winter habitat of these unique animals.

The success of the artificial hibernacula and our enhanced understanding of natural hibernacula create a greater level of comfort when evaluating how LEWS might be affected if natural hibernacula are lost. A wise spider once said, "We're born, we live, and when our time comes, we die. It's just a natural cycle of life" (Charlotte's Web, E.B. White). As we learn more about the creatures on this planet every day, it is our hope that we can improve the quality and length of that cycle of life for all of us, great and small.

Megan Seymour
U.S. Fish and Wildlife Service

Middle Bass Marina Project Snake Update

Since May of this year, Kristin Stanford and her assistant Keith Hanson have been capturing and relocating LEWS from within the Middle Bass Island State Park Marina to the old Lonz Boathouse on the south side of the island. The marina basin, which has been undergoing renovation since this spring, had a 3 ½ ft. tall snake exclusion fence erected to help keep snakes out and the relocated snakes from getting back in.

The good news is when they are able to keep the fence upright and intact, the barrier has worked quite well. However, maintaining 2875 linear feet of silt fence proved to be quite a challenge. Huffman Contracting employee Dave Scherf, has been trying to maintain the fence with assistance from Kristin and Keith, who walk it daily to inspect for problem areas. In June, several weeks of strong rain caused some severe wash outs and holes were being chewed in the bottom of the fence daily by raccoons and muskrats. Dave kept up with the repairs as best as he could but unfortunately some snakes did get back into the basin. To date, 227 individual LEWS have been removed from the marina basin area. Of those, 50 have been relocated a second time, 21 have been relocated three times and four snakes have had to be relocated four separate times! Talk about stubborn!



LEWS basking on a rock near the snake exclusion fence on the Middle Bass Island State Park Marina project area. Photo: Kristin Stanford

Kristin and Keith have also removed other species of snakes from the basin including 95 garter snakes, 27 Northern brown snakes, and over 40 Fox snakes!

In addition to watching for holes in the snake fence, Kristin and Keith have also been checking several box traps that have been placed along the inside of the fence in order to help capture snakes. The traps have done a decent job in capturing several species of snakes including LEWS, Fox and garter snakes. The “snake” traps have also helped remove other animals from the construction area including field mice, rabbits, painted turtles, bullfrogs, greenfrogs, salamanders, robins, red-winged black birds and many terrestrial crayfish! Most surprisingly, one eastern milk snake was also found within one of the traps. This species has never been recorded for Middle Bass and is thought to have hitched a free ride on a piece of equipment the contractor brought over to the island from Cleveland.

The timeline for marina basin completion is still set for this fall. Until then, Kristin and Keith will continue to work with Huffman and ODNR to assist in the removal and relocation of snakes within the project area.

Kristin Stanford, "The Island Snake Lady"
Northern Illinois University



The snake traps designed to help capture LEWS within the construction areas have also been successful in removing other creatures from harm's way too. In this particular trap we found a crayfish defending its newly acquired territory against an eastern cottontail. Photo: Megan Seymour, USFWS

2008 Lake Erie Watersnake Population Census

As in past years, Lake Erie Watersnake populations were censused throughout the U.S. islands during the two weeks from May 27 – June 8. Fifteen long-term study sites on five islands (Kelleys, South Bass, Middle Bass, North Bass, Gibraltar) were included in these censuses. In addition, follow-up censuses were conducted at a subset of sites by Kristin Stanford and her students in her Herpetology class at the F.T. Stone Laboratory during the week of June 9. Finally, Kristin and Keith Hanson have conducted summer-long censuses of our Middle Bass Island State Park study site as part of the marina project that is underway there. Highlights of this year's census work include the following:

- More than 1,850 Lake Erie Watersnake captures were added to our database during 2008. This database now includes more than 16,500 capture records with more than 13,000 having been collected since 2001, the year we first initiated our intensive annual spring census.
- We documented the continued presence of Lake Erie Watersnakes on five small Ohio islands (Green, Rattlesnake, Sugar, Ballast, Gibraltar). This completes one component of the Population Persistence criterion of the Lake Erie Watersnake Recovery Plan – that populations persist on these islands for six or more consecutive years.
- A single Lake Erie Watersnake was found during a visit to West Sister Island, suggesting that while a viable population does not currently persist there, natural recolonization is possible.
- We set a new Lake Erie Watersnake longevity record with the capture of an adult male on Sugar Island that was originally tagged (as an adult) in 1997 – 11 years ago!
- We were joined by reporters, photographers, and videographers from the Sandusky Register, the Cleveland Plain Dealer, and a Toledo news team – stories and video can be found at <http://blog.cleveland.com/metro/2008/06/snakes.html> and <http://www.sanduskyregister.com/articles/2008/06/01/front/779065.txt>.

Twenty-eight people participated in Nerodio 2008, including: Rich King, Kristin Stanford, Jesse Ray, Andrew Moore, and Peter Jones from Northern Illinois University; Matt Thomas, Shawn Kurtzman, Max Caslorani, Kelsey Reider, and Ben Warner from The Ohio State University F.T. Stone Laboratory; Kent Bekker, John Chastain, Tara Onceo, Tim Herman, and Nick Nevins from the Toledo Zoo; Megan Seymour, Jennifer Smith-Castro, and Karen Hallberg from the U.S. Fish and Wildlife Service; Bob Brodman and Jerome Kotel from St. Josephs University; Chuck Gunn, Chad Waffan, and Greg Kramer, local residents; Keith Hanson, Middle Bass Island State Park site monitor; Andy Avram, Lake Metroparks Interpretive Manager; Jeff Row, from Queens University; Bill Flanagan, from Grand Valley State University; and Josh Dobson, from National Park Service, Perry's Victory and International Peace Memorial.

Data entry and analysis over the months ahead will provide updated information on Lake Erie Watersnake population numbers and trends.

Richard King, Ph.D.
Northern Illinois University



Nora Ladd holds an Eastern Fox Snake during a Nature Camp program on snakes. Photo: Valerie Mettler

Nature Camp: Snakes

The absolute most popular segment in the Lake Erie Islands Chapter of the Black Swamp Conservancy (LEIC-BSC) Nature Camp Program is the hands-on snake experience. The program has been part of the nature camp experience for several years and the students want more. This year the snake segment was offered to the “My First Nature Camp” students who are 4 and 5 years old. When the children arrived, Kristin Stanford had tanks of snakes on the floor for them to see. All the students silently lay down on the floor to observe. During the information section, Kristin let the students touch any snakes they chose and then they had the option of holding Brutus, Kristin’s very famous Fox Snake and having their photo taken. Nearly every child decided to wear Brutus around his or her neck (see photo page 4). Nature Campers (ages 6-8) enjoyed a joint luncheon with Kristin and her snakes. About 50 students and parents alike gathered around to ask questions and hear about the snakes habits, needs, and protection efforts. When students were asked how many would like to grow up and have Kristin’s job, the show of hands was unanimous.

Middle Bass students welcomed Keith Hanson to their camp with his bags of snakes. The “My First Nature Camp” students and parents listened intently to facts about all the snakes in Keith’s bags. Even the smallest campers were delighted to hold baby water snakes and wild fox snakes. During the “Adventure Camp 1” (ages 9-10) segment, students were eager to hold baby water snakes, garter snakes and fox snakes. Keith took the students for a snake walk along the beach where he caught water snakes and put them in bags to be taken to the lab for analysis. By the end of the day, everyone was excited with their new information and experiences and eager to head home to tell their families. An experience like this is so important for children of all ages. Unlearning fear is a challenge for everyone, and knowledge is the only way.

Valerie Mettler
Lake Erie Islands Chapter, Black Swamp
Conservancy



Keith Hanson captures LEWS on Middle Bass Island during Adventure Camp 1 (at left), while My First Nature Camp attendees view snakes before a talk from Kristin Stanford, “The Island Snake Lady” (above). Photos by Valerie Mettler.



A baby robin on Middle Bass Island enjoys *Neonate Watersnake a la Carte* for its dinner.

REMINDER!!!

If you received a public opinion survey in the US mail from Northern Illinois University regarding the Lake Erie Watersnake, please fill it out and return it promptly! This information will help in determining if the criteria in the Lake Erie Watersnake Recovery Plan are complete, and if conditions are right to remove the LEWS from the Endangered Species list.



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